

# **Invasion**

## **Design Documentation**

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Engine/Software: Unreal Engine 4



### **Project Purpose:**

I wanted to create a level which feels as though it is part of a living world. Taking place in a location which could support a full game and has a level of believability to it which can fully immerse the player in their gaming experience.

In addition to this (but no less importantly) I wanted to create a game which was challenging but was above all fun to play, allowing the Player some level of choice in how they approach and play the level.

### **I Want to Learn or Improve:**

I wanted to improve the design of the levels I produce. I want to try and create levels which are diverse from each other and offer experiences to the Player that either they haven't had before or offer a new take on pre-existing ideas. I also want to develop my own conceptions about player choice in linear games and how Players can affect the flow and progression of the story within that world.

## **Story and Design**

### **High Concept:**

The Protagonist faces the opening waves of a hostile invasion of an unknown threat and must fight to survive and escape.

### **Story Outline:**

The protagonist is an Ex-Con, living in the city of Caldwin Bay 8 years after they were realised from their sentence. They now work as a maintenance worker in the Dredges.

Caldwin Bay is a coastal city with various districts, chief among which are The Hub (the beating heart of the city which has the best architecture, richest residents and safest homes) and The Dredges (home of the protagonist, the city's slums and the most impoverished and dangerous section of the city).

The protagonist witnesses the first meteorites strike the city and makes a choice to leave Caldwin Bay, not wanting to be involved in either the invasion or whatever comes after.

The Player takes control of the protagonist as they attempt to escape The Dredges and reach the Ferry Terminal which will get them out the city.

### **Environment Setting:**

Caldwin Bay is a setting with heavy Dystopic and Neon Noir influences.

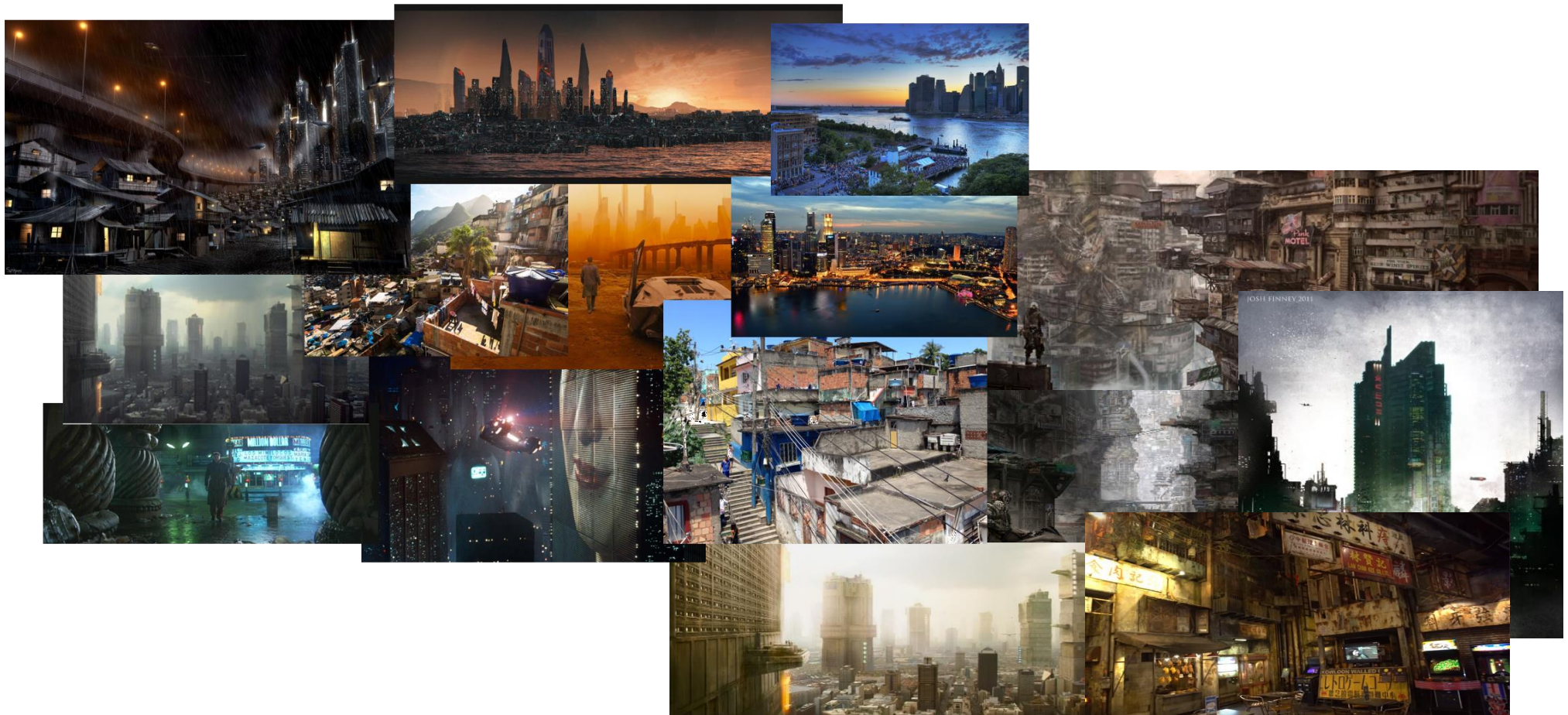
The Dredges are extremely vertical, buildings upon building crammed atop each other to fit as many residents in the smallest possible area.

Players will traverse through the upper levels of The Dredges, through buildings and across rooftops and walkways. Taking place at night to highlight the neon glow, add a layer to the depressive atmosphere of the district and accentuate the explosions and fires from the invasion.

## Environmental Narrative:

In terms of environment design, various assets will be used to show the effects of narrative elements. For example, fires and landed meteorites litter the surroundings showering the damage wrought on the area by the invasion. In addition to this enemies roam the area demonstrating that The Dredges have become overrun by hostile forces.

## Style Reference:



## Colour Palette:

The colour palette for the level is mostly dark colours, dark blues, browns and greys. However, highlights of colour primarily from Neon signs but also from lit windows and fires burning.

### Base Colours:



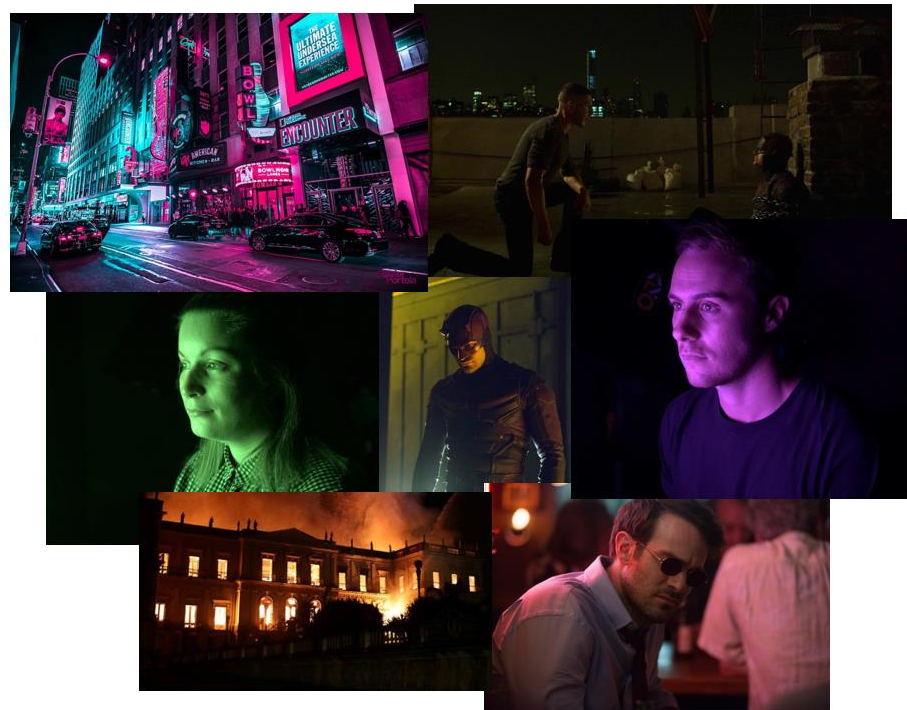
### Neon Highlights:



## Lighting:

The level is set at night both to better exemplify the contrast of the neon signs and fires from the attack, and also to tie it to the Cyberpunk/Blade-Runner thematic inspiration.

In terms of colour design and lighting, the environment should emulate the dark and bleak nature of its existence, it is a slum and it's under attack. However even with these factors, the splashes of colour from neon signs littering should serve to break up this flat grey, blue environment and help to remind the player of the futuristic setting.



### **Level Design:**

- The Player starts in their apartment, looking out over the inlet of Caldwin Bay. They see as the first meteorite streaks past and feel the shake as it strikes the city. From here another meteorite strikes the room the Player is in and they have their first fight using only their melee weapon, from there they progress upstairs are offered class selection.

**The purpose of this is to introduce the Player to the situation they are in and a vague outline of story. In addition to this it also serves to introduce the player into base combat without any alterations to it.**

- From there they Player is offered a choice of class from a wall vendor, and then once leaving their apartment, they are offered multiple paths through the level.

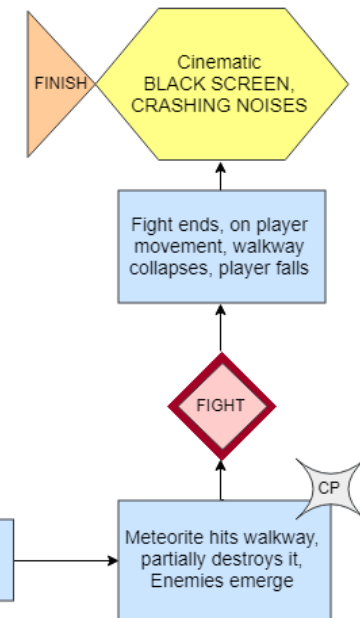
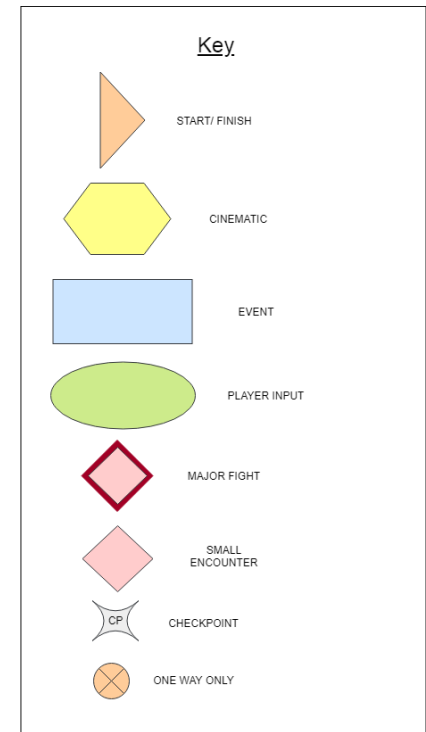
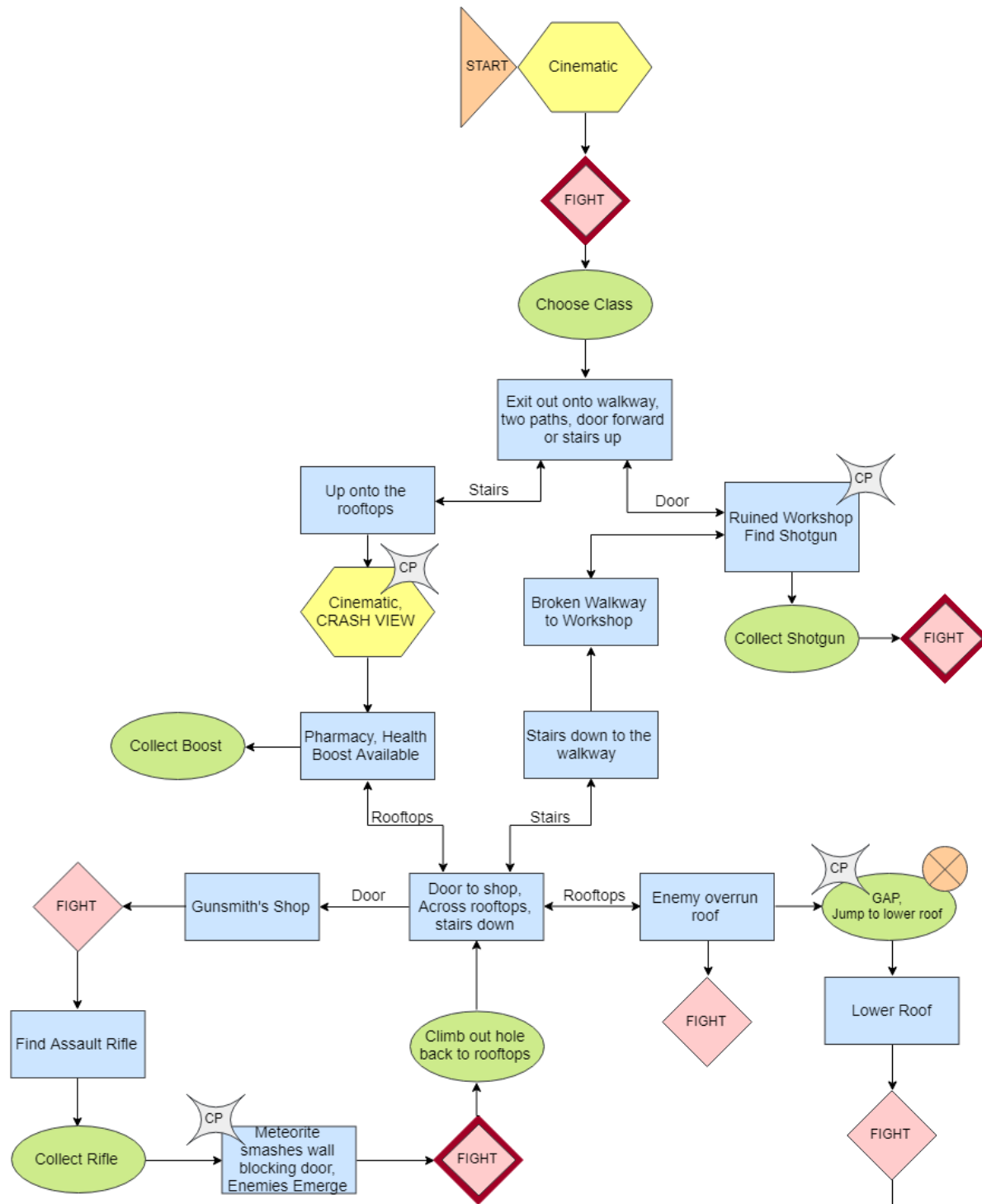
**The purpose of this is to express the element of Player choice that the level has, choosing the class that they feel best suits their style of play and then choosing how to progress further. Whilst both paths eventually lead to the same place, the open nature of the level is an attempt to remove the completely linear feel to the game and allow elements of replayability due to the varied nature of pickups and weapons.**

- Enemy Encounters are specifically spread throughout the level to happen at moments of note, when a new weapon is available, or the Player reaches certain key checkpoints.

**In terms of purpose, the encounters are split up to allow Players time to explore the environment and find items (weapons and pickups) to help them later down the line. Additionally, having encounters after collecting new weapons allows the player to learn the weapon and test them out.**

- Eventually all paths in the level coalesce into one uniform to the final fight and end of the level.

**This allows Players to make their own way through the level but also makes sure that they always have a minimum of 4 encounters with enemies, get to try out different abilities and weapons and still gain the full effect of the main story beats.**





## Features

### Gameplay Features:

- Whilst playing, users will encounter a multi-layered environment with multiple routes through it.
- The player must undertake sections of combat with invading enemies, shooting will be fierce and fast-paced, enemies will attempt to engage in close quarters combat to negate the range of the player's firearms.
- Pickups will be available for the player to collect, whether it be new weapons or health pickups.
- Due to the vertical nature of The Dredges and the route the player may take across the rooftops, they will be required to make various challenging jumps, and carefully traverse treacherous areas.
- Whilst the paths through the level are somewhat marked to assist players in progression, for the most part they must explore to find their own way to escape The Dredges.
- The player can only carry a maximum of 2 weapons (except for the Lead-Slinger Class) meaning they must carefully choose what loadout to have.

### Pickups:

Pickups appear tend to in important buildings, either for reasons of story or because the area is an important part of gameplay. Players may collect new weapons from a few areas, these are the assault rifle and shotgun and aim to give the player an edge in combat.

The other available pickups are the health pickup, "reVAMP" Syringes and "Purity" Syringes.

reVAMP is a drug which alleviates pain and allows the user to feel rejuvenated for a short amount of time. However, prolonged use can have negative effects, after multiple uses in a short period of time the user may become reliant/addicted.

Purity is a medication with removes all active effects the user is under, whether that be positive and/or negative.

	reVAMP	Purity
Effect	5+ uses increases the percentage chance of addiction, addiction implements a health penalty.	Removes active effects from the player, e.g. addiction or active healing.
Health Restored	10 hitpoints	N/A
Duration	8 seconds	Instantaneous
Health Penalty	-25% to Hitpoint Maximum	N/A



## Player Characteristics

The Player character has a base set of stats which are maintained across all classes. However, some classes may alter these stats once selected.

## Character Classes

Within the world a “Class” is a set of physical and neurological enhancements which allow the user to perform actions normal people could not. Extending their abilities beyond the naturally achievable “C.L.A.S.S” users can move faster, jump higher, and send surges of energy through their enhancements to charge weaponry or activate the abilities afforded to them.

The Player has gained access to a “C.L.A.S.S” machine in their apartment, they already have enhancements installed from their previous life as a Convict although they have been deactivated upon their incarceration.

In terms of gameplay mechanics each class comes with 3 abilities. One is Passive, constantly active in the background. The second and third are abilities activated by player input, both have cooldown timers, one short and one long which can be sped-up by killing enemies and completing objectives.



When the machine is used the Player can reactivate their enhancements and choose their configuration, they have access to the following 3 options;

**The Bruiser:**

The Bruiser's **Passive Ability** is an increase to melee damage by 25%, this applies to all damage dealt by a melee weapon.

The Bruiser's **Short Charge Ability** allows them to create external armour to protect from damage. Acting as a shield The Bruiser gains 25 Armour points which are depleted before health. Armour can be stacked to a maximum of 100 points.

The Bruiser's **Long Charge Ability** is a Rush attack in which they charge forward (in a straight line) dealing damage to any enemies in the path and knocking them back. The attack can be paired with armour for additional damage, 10 damage per 25 armour points.

**The Lead-Slinger:**

The Lead-Slinger's **Passive Ability** allows them to carry a 3<sup>rd</sup> weapon.

The Lead-Slinger's **Short Charge Ability** is a powered shot which can be fired from a weapon resulting in massive damage to a single target.

The Lead-Slinger's **Long Charge Ability** enables them to create unlimited ammunition for a short time, allowing continuous firing.

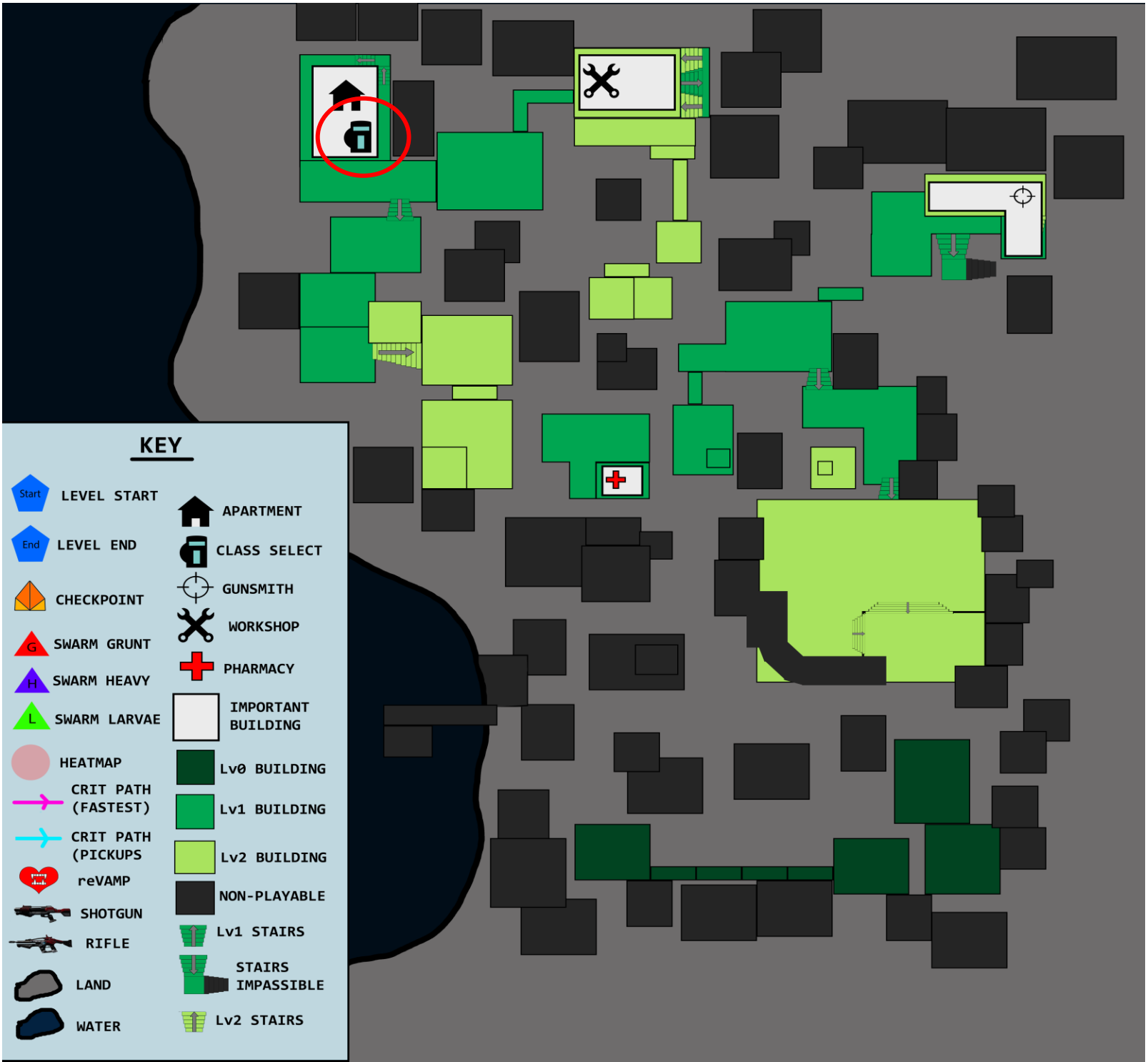
**The Strider:**

The Strider's **Passive Ability** grants a 25% increase to all damage if they are only carrying one weapon.























The Strider's **Short Charge Ability** grants a 25% increase to any damage dealt to enemies from behind.

The Strider's **Long Charge Ability** is a dash action which allows The Strider to cross a short distance in one rapid movement, enabling the Player to dodge incoming attacks and manoeuvring behind enemies to gain the class damage bonus.

	Base Character	Bruiser	Lead-Slinger	Strider
Starting Health	100	100	100	100
Max Health	100	150	150	100
Starting Armour	N/A	0	N/A	N/A
Max Armour	N/A	100	N/A	N/A
Movement Speed	600	500/ 400 (Armoured)	600	750
Passive Ability	N/A	25% Increase Melee	Carry 3rd Weapon	25% Damage Increase, when carrying 1 weapon
Short Charge Ability	N/A	External Armour	Charged Shot	25% Damage Increase from behind
Short Charge Time	N/A	25s	25s	25s
Long Charge Ability	N/A	Bull-Rush (charge attack)	Cell Surge (Unlimited Ammo)	Longstride (dash action)
Long Charge Time	N/A	1 minute + Reduction	1 minute + Reduction	1 minute + Reduction



### KEY

-  LEVEL START
-  LEVEL END
-  CHECKPOINT
-  SWARM GRUNT
-  SWARM HEAVY
-  SWARM LARVAE
-  HEATMAP
-  CRIT PATH (FASTEST)
-  CRIT PATH (PICKUPS)
-  reVAMP
-  SHOTGUN
-  RIFLE
-  LAND
-  WATER
-  APARTMENT
-  CLASS SELECT
-  GUNSMITH
-  WORKSHOP
-  PHARMACY
-  IMPORTANT BUILDING
-  Lv0 BUILDING
-  Lv1 BUILDING
-  Lv2 BUILDING
-  NON-PLAYABLE
-  Lv1 STAIRS
-  STAIRS IMPASSIBLE
-  Lv2 STAIRS

## Enemies:

### Design:

The Swarm (a name given by the survivors of their plague). A race from "Off-World", they communicate through a shared Hive Mind which allows them to experience everything the other members of their Hive can; see, hear, taste and even what they're thinking. Their arrival is heralded by flaming meteorites carving through the sky and striking Caldwin Bay, wherever these meteorites hit The Swarm pour from them invading the city and overrunning all pre-existing life.



**Characteristics:**

The Swarm specialise in up-close combat, “swarming” (thus their given name) their targets to overrun them.

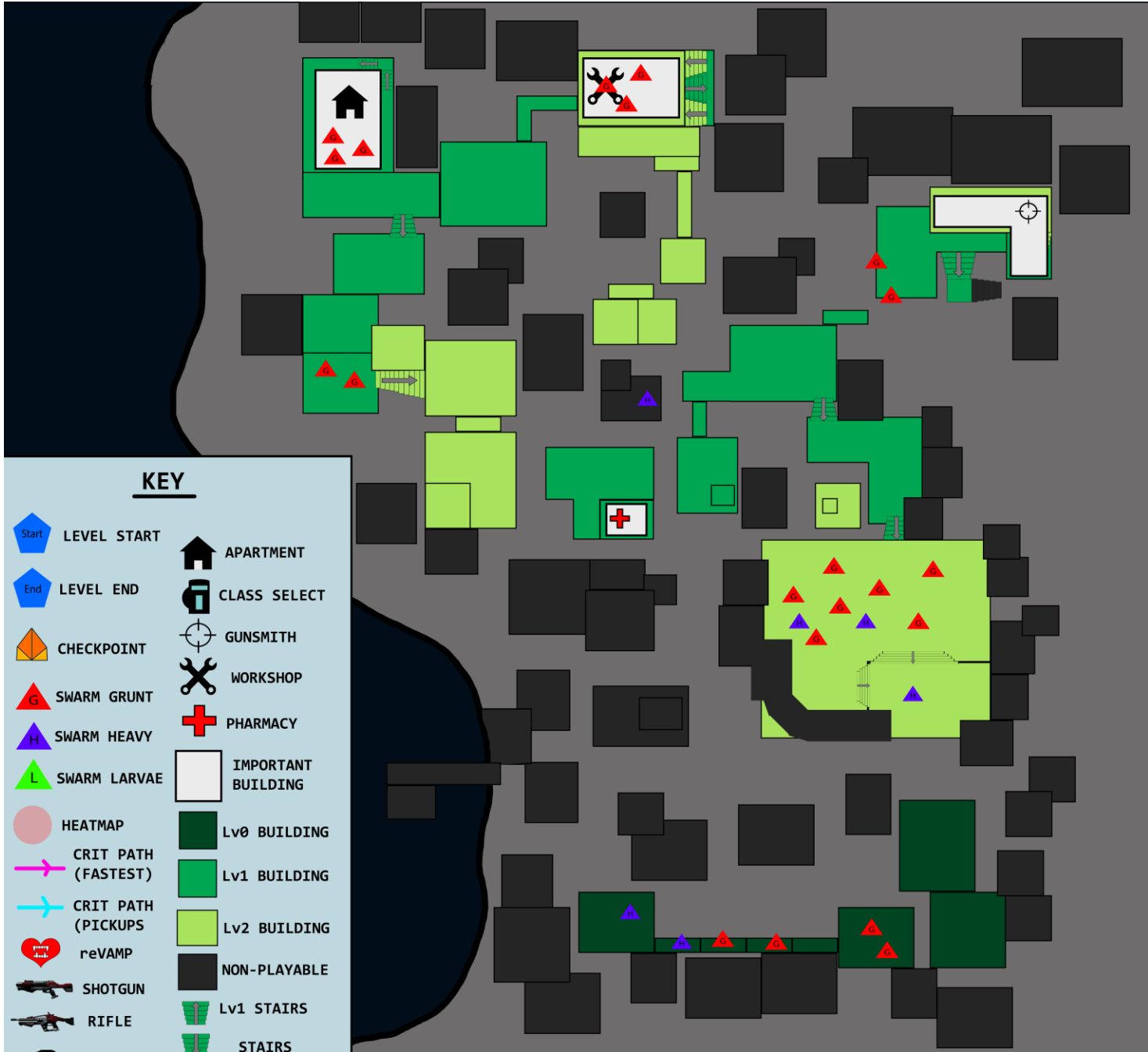
Starting as a smaller race who only employed melee, they have now evolved to also utilise range. The smaller Swarm “Grunts” try to overrun their enemies in large groups whilst the larger, more heavily armoured creatures fire acid from afar at their targets.

The Larva of the Swarm are just as deadly as their grown versions. Although slower moving and weaker in physical body, they can lie in wait for enemies, creating traps and slowing enemy movements as they become restrained by the viscous slime they spit.

	Swarm Grunt	Swarm Heavy
Health	150	200
Armour	N/A	200
Movement Speed	800	600
Movement Type	Walking/Patrolling, Rushing	Walking/Patrolling
Attack Type	Claws, Rush	Claws
Damage	15	40

Enemy density and distribution vary throughout the level. Enemies are fairly spread out, especially in the beginning areas. Enemies increase in frequency towards the level end, both to increase difficulty and the suggestion to the player that narratively, the Dredges are heavily destroyed and invaded.

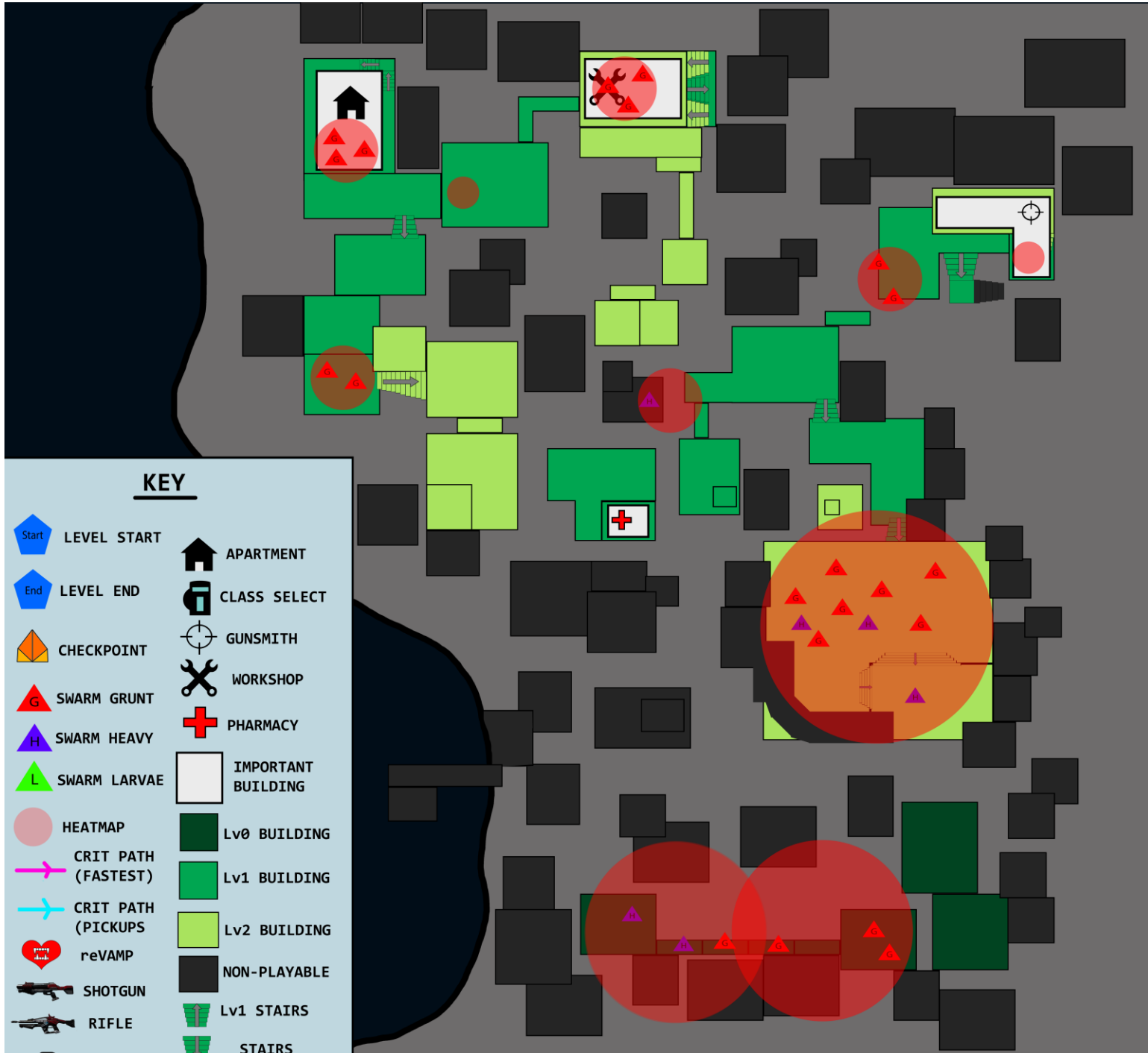
The level features chokepoints to narrow the area for combat, in much the same way that “corridor shooters” do. This keeps in line with the packed in slum setting but also serves to offer the enemies the best place to utilize their abilities.



**KEY**

- |  |                     |  |                    |
|--|---------------------|--|--------------------|
|  | LEVEL START         |  | APARTMENT          |
|  | LEVEL END           |  | CLASS SELECT       |
|  | CHECKPOINT          |  | GUNSMITH           |
|  | SWARM GRUNT         |  | WORKSHOP           |
|  | SWARM HEAVY         |  | PHARMACY           |
|  | SWARM LARVAE        |  | IMPORTANT BUILDING |
|  | HEATMAP             |  | Lv0 BUILDING       |
|  | CRIT PATH (FASTEST) |  | Lv1 BUILDING       |
|  | CRIT PATH (PICKUPS) |  | Lv2 BUILDING       |
|  | reVAMP              |  | NON-PLAYABLE       |
|  | SHOTGUN             |  | Lv1 STAIRS         |
|  | RIFLE               |  | STAIRS             |





## Weapons:

### Design:

The world of Caldwin Bay is fairly grounded, in the same vein as other Noir or Cyberpunk projects. Although set in futuristic time, with more advanced technology, that same technology still holds connections to the current tech we have and to tech from our past (in a sort of throwback to classic 80s era projects such as Robocop, Judge Dredd and their perception of what “The Future” would look like).

To keep with the theme and style of the game, there are only a limited number of weapons available and the Player may only carry a limited number of these at a time.

The Player starts the level equipped with a melee weapon, from here they can progress through the level collecting other weapons such as the Shotgun and/or the Rifle.



### Characteristics:

Each weapon available to the Player has different defining characteristics which separate them from each other but also offer the Player varied ways to approach combat situations and fight enemies.

The machete is given to Player as the game starts, ideal for close-combat and quickly attacking enemies, the machete is a fast but low damage weapon to help the player defend themselves from the start.

The shotgun has a short range but extremely high damage output. Best used in situations such as fighting up close with enemies, clearing rooms of enemies and dealing heavy damage to targets. The shotgun's two main weaknesses are its lack of range and its unwieldy nature (firing and reloading slower than other weapons).

The rifle has a medium to long range with a middling damage output. It's best utilised when being used to engage enemies at a distance, quickly attack several enemies and destroying enemy armour.

	Machete	Rifle	Shotgun
Damage			
Damage Modifiers	Bruiser: +25%, Strider: +25% each for Lightwiegth and Guerillia Fighter	Strider: +25% each for Lightwiegth and Guerillia Fighter	Strider: +25% each for Lightwiegth and Guerillia Fighter
Damage Type	Melee	Energy Pulse	Large Energy Pulse
Loaded Ammunition	N/A	25	3
Max Ammunition	N/A	75	21
Reload Speed	N/A	2 Seconds	5 Seconds
VFX	Swinging/Strike Animation	Muzzle Flash, Energy Particle	Muzzle Flash, Energy Beam, Hit Explosion

Focal points for story beats and gameplay tend to coincide with important buildings and enemy placement. The types of focal point vary however for example;

Neon signs are placed along all accessible areas, to show the player routes they can take but also to split up the base colours of the environment with dashes of colour.

Meteorites are imbedded in buildings in the area, surrounded by fire, these also split up the environment but also help to show the player where enemy encounters will take place as there are always enemies next to at least one meteorite.

Interiors of buildings also act as focal points for the player's attention and for gameplay, they are visually different from the other areas in the level because they are inside, the rest of the level takes place in the open area and this difference is stark in contrast. Furthermore, all the pickups in this level appear in interiors meaning the player is rewarded for entering them.

The Courtyard is the last major point of focus for the player, filled with a large group of enemies, this area serves as the "boos encounter" for the player and, after a hard-fought battle they can progress on to the end of the level. Design-wise this area is different to others because, whilst it's outside, it's almost entirely enclosed by buildings, this was done to create a coliseum like feel and to centre the player on the fight ahead of them.

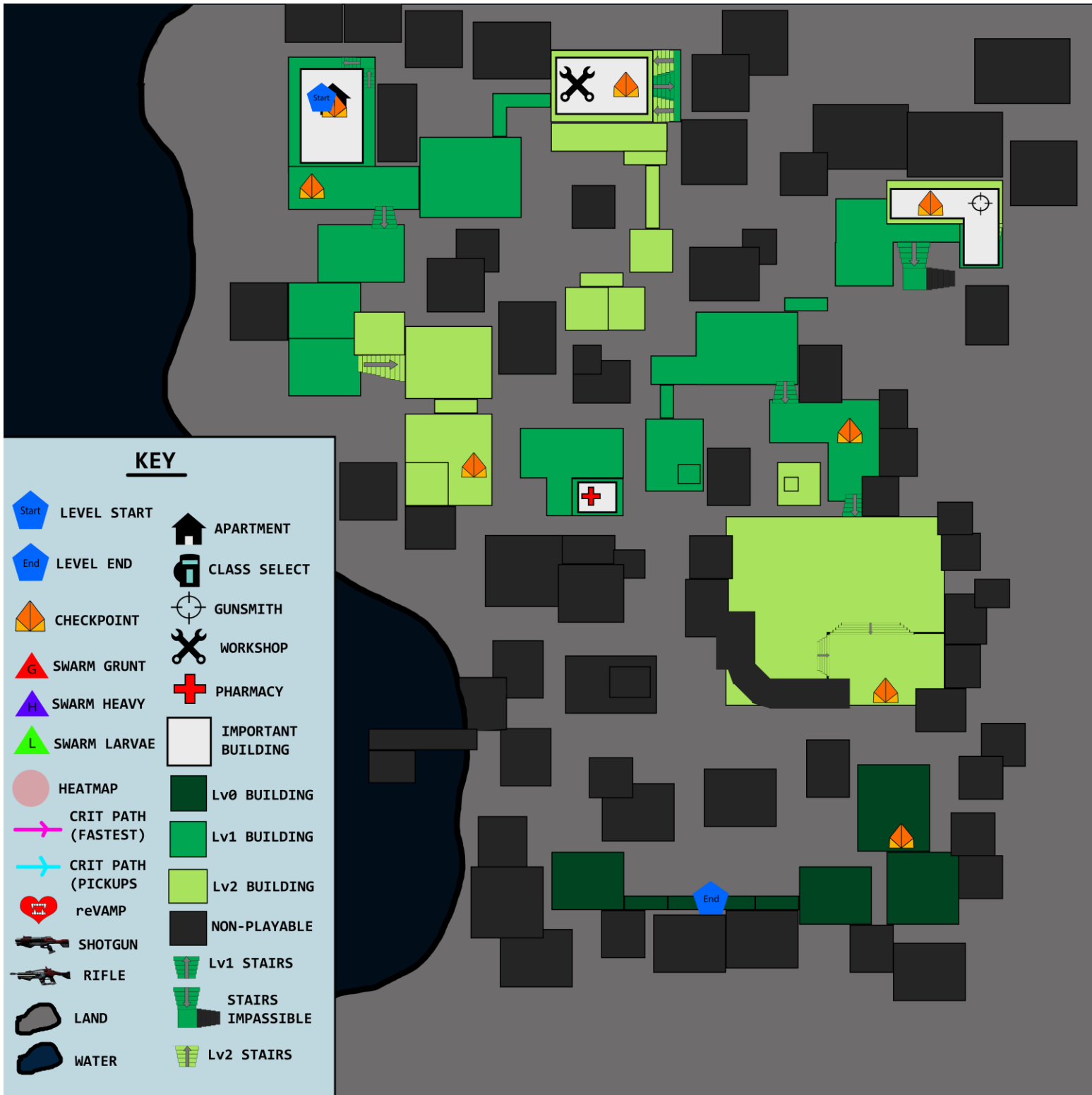
### **FPS Design:**

Most FPSs have a win/lose condition, in some this may be as complex as making story altering decisions and getting to the right outcome, in others it may be about gaining points and the player "loses" if they don't achieve their points goal.

Invasion's Win/Lose conditions boil down to a simple, complete the objectives to Win, died to lose and you must restart.

Death can come fairly easily to the player, enemies deal varying degrees of damage, fire can harm the player or the van fall from the rooftops to their demise. Invasion should feel like a real world in which the perils of attack and dying feel ever present to the player.

Reaching checkpoints and restarting are easy for the player. Checkpoints are placed before new encounters with danger/damage to make it easier to continue from where they left off.



## Asset List:

All the assets used in the level come from the ExReign framework or Soul City pack, some have been modified but nothing else has been imported.



### **Further Implementation:**

Some of the mechanics I want to implement in the future are a secondary mode with a scoring system, which collates data from kills, objectives and multipliers to give the player a more arcade-y mode to play around with, this could draw inspiration from games such as Bulletstorm or even Rocksteady's Arkham games. I would also like to add in a heavier class system which would feature perk trees and skills which cannot be unlocked until set points, whether this be level or story progression based.

### **PHOTO REFERENCE:**

#### **Colour Reference and Lighting:**

<https://www.phoenixnewtimes.com/arts/what-daredevil-season-two-means-for-the-future-of-marvel-and-netflix-8192010>

<https://www.dnainfo.com/new-york/20160414/hells-kitchen-clinton/8-things-you-didnt-know-about-filming-daredevil-new-york-city/#slide-1>

<https://www.dnainfo.com/new-york/20160414/hells-kitchen-clinton/8-things-you-didnt-know-about-filming-daredevil-new-york-city/#slide-8>

[https://www.buzzfeed.com/annamendoza/my-eyes-](https://www.buzzfeed.com/annamendoza/my-eyes-hurt?utm_source=dynamic&utm_campaign=bfsharecopy&utm_term=.cbMj89p07&sub=0_120655128#120655128)

[hurt?utm\\_source=dynamic&utm\\_campaign=bfsharecopy&utm\\_term=.cbMj89p07&sub=0\\_120655128#120655128](https://www.buzzfeed.com/annamendoza/my-eyes-hurt?utm_source=dynamic&utm_campaign=bfsharecopy&utm_term=.cbMj89p07&sub=0_120655128#120655128)

<https://www.cbsnews.com/news/milepost-devastating-fire-at-the-national-museum-of-brazil/>

<https://mymodernmet.com/neon-new-york-xavier-portela/>

#### **Class Reference:**

<https://www.deviantart.com/macarious/art/rebellion-female-soldier-character-design-671935928>

<https://www.artstation.com/artwork/IDWVO>

<https://www.artstation.com/artwork/Ngb6z>

<https://www.artstation.com/artwork/3m8QD>

<https://www.artstation.com/artwork/wPY49>

<https://echoesinthedark.obsidianportal.com/characters/amos>

<http://www.firebat.pl/npc.html>

[https://residentevil.fandom.com/wiki/Jake\\_Muller](https://residentevil.fandom.com/wiki/Jake_Muller)

<https://www.artstation.com/artwork/133Go>

<https://www.artstation.com/artwork/qANBa>

**Environment reference:**

<https://www.unrealengine.com/marketplace/soul-city>

<https://www.deviantart.com/ornicar/art/Blade-Runner-03-158387964>

<https://www.deviantart.com/josh-finney/art/Dangerous-Days-205111952>

<https://www.deviantart.com/duster132/art/Babel-04-391343166>

<https://www.deviantart.com/duster132/art/Babiru-511579551>

<https://www.geek.com/culture/crazy-cyber-punk-arcade-is-right-out-of-bladerunner-1656509/>

<https://www.deviantart.com/wolfleben/art/Dredd-Mega-City-One-Alternative-542482013>

<https://cdnassets.hw.net/dims4/GG/b27a305/2147483647/resize/876x%3E/quality/90/?url=https%3A%2F%2Fcdnassets.hw.net%2F8f%2Fe8%2F67cb0e0e4cb1b0466e274bfb680f%2Fblade-runner-2049-spinner-skyline.jpg>

[https://images.adsttc.com/media/images/5a99/41cc/f197/cc7a/e000/0226/large\\_jpg/fb8ef8897bd3469cb1e2bce740f68ad6.jpg?1519993287](https://images.adsttc.com/media/images/5a99/41cc/f197/cc7a/e000/0226/large_jpg/fb8ef8897bd3469cb1e2bce740f68ad6.jpg?1519993287)

<https://vignette.wikia.nocookie.net/judgedredd/images/b/bc/640px-Dredd-Film-City-View.png/revision/latest?cb=20140605041837>

<http://catcomm.org/wp-content/uploads/2013/11/Provid%C3%AAncia.jpg>

<https://strawberrytours.com/images/RioDeJaneiro/Tours/FreeTourOfTheFavelaRiodeJaneiro/gallery/04-Free-Tour-of-the-Favela-Rio-de-Janeiro-4.jpg>

<http://sf.co.ua/14/02/wallpaper-698248.jpg>

<https://cdnb.artstation.com/p/assets/images/images/003/622/315/large/guido-salto-10052016-cyberpunkcity-gs-01.jpg?1475697392>

[https://s3.pixers.pics/pixers/700/FO/69/79/59/53/700\\_FO69795953\\_672b5a82bea2ae9854eeb21fd2193e95.jpg](https://s3.pixers.pics/pixers/700/FO/69/79/59/53/700_FO69795953_672b5a82bea2ae9854eeb21fd2193e95.jpg)

<https://i1.wp.com/wp-blog.hipmunk.com/wp-content/uploads/2015/07/east-river.jpg?fit=1024%2C682>



**Enemy Reference:**

[http://masseffect.wikia.com/wiki/Rachni\\_Wars](http://masseffect.wikia.com/wiki/Rachni_Wars)  
<https://steemit.com/tabletop-rpg/@grimjim/mass-effect-rpg-part-eighteen-rachni>  
[http://caw.wikia.com/wiki/The\\_Xenomorph\\_\(Alien\)](http://caw.wikia.com/wiki/The_Xenomorph_(Alien))  
<https://rkik.wordpress.com/2009/08/31/first-tyranid-genestealer/>  
[https://www.games-workshop.com/en-GB/Carnifex-Brood?\\_requestid=2513665](https://www.games-workshop.com/en-GB/Carnifex-Brood?_requestid=2513665)  
<https://en.wiktionary.org/wiki/larva>  
<https://www.joshfrogs.com/black-soldier-fly-larvae-50-count-extra-small.html>  
<https://es.kisspng.com/kisspng-9vd1v4/>  
[https://www.dandwiki.com/wiki/Phargion\\_\(3.5e\\_Creature\)](https://www.dandwiki.com/wiki/Phargion_(3.5e_Creature))  
<https://www.wondermondo.com/10-most-impressive-impact-craters-of-the-world/>  
<https://sciencing.com/interesting-meteorites-6163495.html>  
<https://www.freegreatpicture.com/earth-star/meteorite-53408>

**Weapon Reference:**

[http://www.imfdb.org/wiki/File:Robocop14\\_TSR66.jpg](http://www.imfdb.org/wiki/File:Robocop14_TSR66.jpg)  
<http://www.gameguides.cc/Article/tvgame/allvideogametwo/201512/27741.html>  
[http://fallout.wikia.com/wiki/That\\_Gun](http://fallout.wikia.com/wiki/That_Gun)  
[http://deusex.wikia.com/wiki/FR-27\\_Sanction\\_Flechette\\_Rifle\\_\(DXMD\)](http://deusex.wikia.com/wiki/FR-27_Sanction_Flechette_Rifle_(DXMD))  
<https://www.flickr.com/photos/volpinprops/9063970712>  
<https://www.artstation.com/artwork/oOXX0k>  
[http://xcom.wikia.com/wiki/Gauss\\_Rifle](http://xcom.wikia.com/wiki/Gauss_Rifle)  
<https://www.homedepot.com/p/Fiskars-22-in-Machete-with-Softgrip-Handle-370780-1005/202319442>  
<https://the-sword-stall.myshopify.com/products/wd-small-zombie-machete>